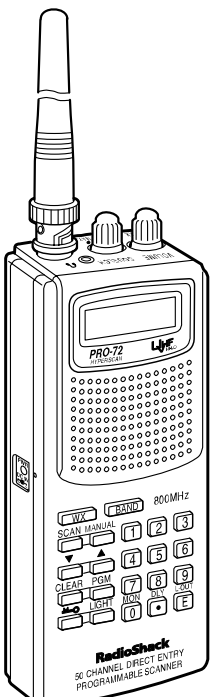
OWNER'S MANUAL Cat. No. 20-566

PRO-72
50-Channel Portable Scanner

Please read before using this equipment.



RadioShack™

FEATURES

Your new RadioShack PRO-72 50-Channel Portable Scanner gives you direct access to over 32,000 exciting frequencies, including police and fire departments, ambulance services, and amateur radio services. You can select up to 50 channels to scan, and you can change your selection at any time.

The secret to your scanner's ability to scan so many frequencies is its custom-designed microprocessor — a tiny, built-in computer.

Your scanner has these special features:

Ten Preprogrammed Search Bands — let you search for transmissions within preset frequency ranges, so you can find interesting frequencies more quickly.

Ten Preprogrammed Weather Frequencies — keep you informed about current weather conditions.

HyperScan™ and HyperSearch™ — so you can scan up to 25 channels per second and search up to 50 steps per second.

Fifty Channels — let you store up to 50 of your favorite frequencies for easy recall and scanning.

Duplicate Frequency Check — automatically warns you if you try to store a frequency you've already stored, to help you use the scanner's memory more efficiently.

Monitor Memory — lets you temporarily save a frequency located during a direct search, so you can move it to channel storage later.

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Channel Lockout — keeps channels you select from being scanned.

Memory Backup — keeps the channel frequencies stored in memory for about 1 hour during a power loss.

Two-Second Scan Delay — delays scanning for 2 seconds before moving to another channel, so you can hear more replies.

Key Lock — lets you lock the keys to help prevent accidentally changing the scanner's programming.

Flexible Antenna with BNC Connector — provides excellent reception. The BNC connector makes it easy to attach and remove the antenna or a variety of optional antennas.

Liquid Crystal Display — clearly displays how the scanner is set and makes it easy to change those settings.

Display Backlight — makes the scanner's display easy to read in low-light situations.

Three Power Options — you can power the scanner from internal batteries (not supplied – including non-rechargeable batteries, rechargeable batteries, or a rechargeable scanner battery pack) or external AC or DC power (using optional adapters).

We recommend you record your scanner's serial number here. This number is on the scanner's back panel.

Serial Number: _____

Your PRO-72 scanner can receive all of these frequencies:

- 29–54 MHz (10-Meter Amateur Radio, VHF Lo, 6-Meter Amateur Radio)
- 137–174 MHz (Aircraft/Air Shows, Government, 2-Meter Amateur Radio, VHF Hi)
- 380–512 MHz (Military Aircraft, UHF Lo, 70-Centimeter Amateur Radio, UHF “T” Band, Government)
- 806–824 MHz (UHF Public Service, Trunked Services)
- 849–869 MHz (UHF Hi, Trunked Services)
- 894–960 MHz (UHF Hi, 33-Centimeter Amateur Radio, Trunked Services)

For a list of the frequency ranges in the ten preprogrammed search bands, see “Search Bands” on Page 24.

In addition, your scanner is preprogrammed with the following weather service frequencies:

- 161.6500 MHz
- 161.7750 MHz
- 162.4000 MHz
- 162.4250 MHz
- 162.4500 MHz
- 162.4750 MHz
- 162.5000 MHz
- 162.5250 MHz
- 162.5500 MHz
- 163.2750 MHz

FCC NOTICE

Your scanner might cause TV or radio interference even when it is operating properly. To determine whether your scanner is causing the interference, turn off your scanner. If the interference goes away, your scanner is causing the interference. Try to eliminate the interference by:

- Moving your scanner away from the TV or radio
- Connecting your scanner to an outlet that is on a different electrical circuit from the TV or radio
- Contacting your local RadioShack store for help

This device complies with Part 15 of the *FCC Rules*. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

SCANNING LEGALLY

Your scanner covers frequencies used by many different groups including police and fire departments, ambulance services, government agencies, private companies, amateur radio services, military operations, pager services, and wireline (telephone and telegraph) service providers. It is legal to listen to almost every transmission your scanner can receive. However, there are some transmissions you should never intentionally listen to. These include:

- Telephone conversations (either cellular, cordless, or other private means of telephone signal transmission)
- Pager transmissions
- Any scrambled or encrypted transmissions

According to the Electronic Communications Privacy Act (ECPA), you are subject to fines and possible imprisonment for intentionally listening to, using, or divulging the contents of such a transmission unless you have the consent of a party to the communication (unless such activity is otherwise illegal). We encourage responsible, legal scanner use.

CONTENTS

PREPARATION

POWER SOURCES

You can power your scanner from any of four sources:

- Internal batteries (not supplied) with the provided battery holder
- A rechargeable scanner battery pack (not supplied)
- Standard AC power (using an optional AC adapter)
- Vehicle battery power (using an optional DC cigarette-lighter adapter)

Notes:

- Connecting an AC or DC adapter to the scanner disconnects any internal batteries, but it does not disconnect a rechargeable battery pack. If you install a rechargeable battery pack, you can operate the scanner and recharge the battery pack at the same time. See “Using Batteries” below and “Charging a Rechargeable Battery Pack” on Page 14.
- If the scanner stops working properly after you connect it to power, try resetting it. See “Resetting/Initializing the Scanner” on Page 50.

Using Batteries

You can power your scanner from six AA batteries. For the longest operation and best performance, we recommend alkaline batteries, such as RadioShack Cat. No. 23-552. You can also power the scanner using a rechargeable scanner battery pack, such as Cat. No. 23-288, and recharge it as you use the scanner.

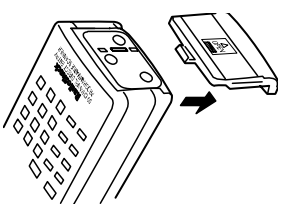
You can also use six rechargeable nickel-cadmium batteries (such as Cat. No. 23-125) to power the scanner. To charge or recharge nickel-cadmium batteries, however, you must remove them from the scanner and use an external charger (such as Cat. No. 23-134).

Note: If you are using a rechargeable scanner battery pack, you must charge it before you can use your scanner (see "Charging a Rechargeable Battery Pack" on Page 14).

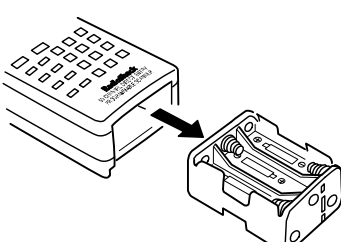
Caution: Do not mix old and new batteries, different types of batteries (standard, alkaline, or rechargeable), or rechargeable batteries of different capacities.

Follow these steps to install batteries or a battery pack.

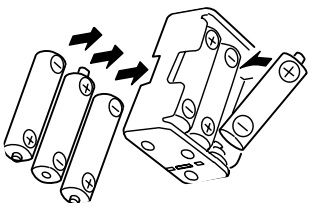
1. Press down on the battery compartment cover on the bottom of the scanner and slide the cover in the direction of the arrow to remove it.



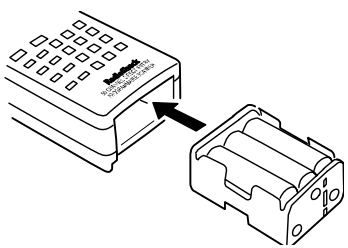
2. Slide the battery holder out of the battery compartment.



3. If you are installing individual batteries, insert six AA batteries in the battery holder as indicated by the polarity symbols (+ and –) marked on the battery holder.



4. Slide the battery holder or battery pack into the compartment as shown.



Caution: The battery holder or battery pack fits only one way inside the battery compartment. Do not force it.

5. Replace the cover.

When battery power is low, **BATT** flashes and the scanner beeps about every 3 seconds. Immediately replace all six non-rechargeable batteries, remove and recharge all six rechargeable batteries, or recharge the battery pack.

Caution: Always dispose of old batteries promptly and properly. Do not bury or burn them.

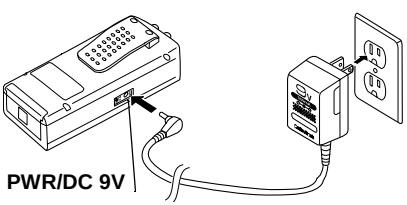
Using Standard AC Power

To power the scanner from AC power, you need an AC adapter (Cat. No. 273-1665).

Cautions:

- You must use an AC adapter that supplies 9 volts and delivers at least 200 milliamps. Its center tip must be set to negative, and its barrel plug must correctly fit the scanner's **PWR/DC 9V** jack. The recommended adapter meets these specifications. Using an adapter that does not meet these specifications could damage the scanner or the adapter.
- When you finish using the AC adapter, disconnect it from the AC outlet first. Then disconnect it from the scanner.

Plug the adapter's 1.3 mm inner diameter/3.4 mm outer diameter barrel plug into the scanner's **PWR/DC 9V** jack. Then plug the adapter's power module into a standard AC outlet.



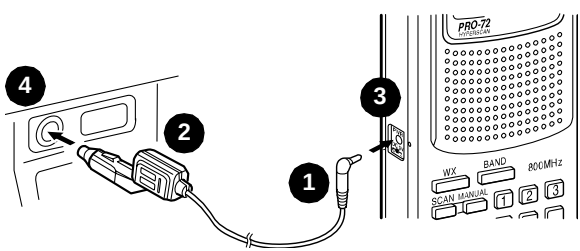
Warning: Do not use an AC adapter's polarized plug with an extension cord, receptacle, or other outlet unless the blades can be fully inserted to prevent blade exposure.

Using Vehicle Battery Power

To power the scanner from your vehicle's cigarette-lighter socket, you need a DC adapter (Cat. No. 270-1560).

Cautions:

- You must use a DC adapter that supplies 9 volts and delivers at least 200 milliamps. Its center tip must be set to negative, and its plug must correctly fit the scanner's **PWR/DC 9V** jack. The recommended adapter meets these specifications. Using an adapter that does not meet these specifications could damage the scanner or the adapter.
- To protect your vehicle's electrical system, always plug the adapter into the scanner before you plug it into your vehicle's cigarette-lighter socket. Always unplug the adapter from the vehicle's cigarette-lighter socket before you unplug it from the scanner.



1. Connect the DC adapter's supplied 1.3 mm inner diameter/3.4 mm outer diameter barrel plug to the cable, with the tip set to – (negative).
2. Set the adapter's voltage switch to **9V**.
3. Insert the barrel plug into the scanner's **PWR/DC 9V** jack.
4. Plug the other end of the adapter into your vehicle's cigarette-lighter socket.

Notes:

- Mobile use of this scanner is unlawful or requires a permit in some areas. Check the laws in your area.
- If the scanner does not operate properly when you connect a DC adapter, unplug the adapter from the cigarette-lighter socket and clean the socket to remove ashes and other debris.

Charging a Rechargeable Battery Pack

Your scanner has a built-in charging circuit that lets you charge a rechargeable battery pack (Cat. No. 23-288) while it is in the scanner. To charge the battery pack, simply connect an AC or DC adapter to the scanner's **PWR/DC 9V** jack.

It takes about 14–16 hours to recharge a battery pack that is fully discharged. You can operate the scanner while recharging the battery pack, but charging takes longer.

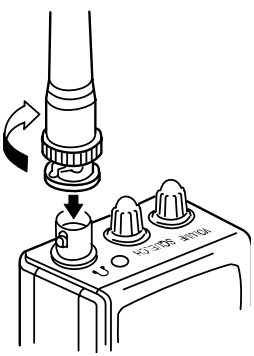
Notes:

- If you want to take the battery pack out of the scanner to charge it, follow the instructions in "Using Batteries" on Page 9 to remove it, then follow the instructions provided with the battery pack to charge it.
- A rechargeable battery pack lasts longer if you let it fully discharge once a month. To do this, simply use the scanner until **BATT** flashes and the scanner beeps about every 3 seconds. Then fully charge the battery pack.

Important! At the end of a rechargeable battery pack's useful life, it must be recycled or disposed of properly. Contact your local, county, or state hazardous waste management authorities for information on recycling or disposal programs in your area. Some options that might be available are: municipal curb-side collection, drop-off boxes at retailers such as your local RadioShack store, recycling collection centers, and mailback programs.

CONNECTING THE ANTENNA

Follow these steps to attach the supplied flexible antenna to your scanner.



1. Align the slots around the antenna's connector with the tabs on the **ANT** jack.
2. Press the antenna down over the jack and turn the antenna's base clockwise until it locks into place.

Connecting an Optional Antenna

The **ANT** jack on the top of the scanner makes it easy to use the scanner with a variety of antennas. Instead of the supplied antenna, you can attach a different one, such as an external mobile antenna or outdoor base station antenna. Your local RadioShack store sells a variety of antennas.

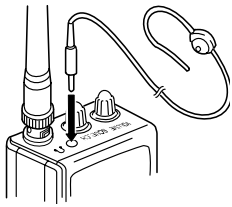
Always use 50-ohm coaxial cable, such as RG-58 or RG-8, to connect an outdoor antenna. For lengths over 50 feet, use RG-8 low-loss dielectric coaxial cable. If your antenna's cable does not have a BNC connector, you will also need a BNC adapter (also available at your local RadioShack store).

Follow the installation instructions supplied with the antenna, route the antenna cable to the scanner, then connect it to the **ANT** jack.

Warning: Use extreme caution when installing or removing an outdoor base station antenna. If the antenna starts to fall, let it go! It could contact overhead power lines. If the antenna touches a power line, contact with the antenna, mast, cable or guy wires can cause electrocution and death! Call the power company to remove the antenna. Do not attempt to do so yourself.

CONNECTING AN EARPHONE/ HEADPHONES

For private listening, you can plug an earphone or mono headphones (available at your local RadioShack store) with a $^1/_8$-inch plug into the jack on top of your scanner. This disconnects the internal speaker.



Listening Safely

To protect your hearing, follow these guidelines when you use an earphone or headphones:

- Do not listen at extremely high volume levels. Extended high-volume listening can lead to permanent hearing loss.
- Set the volume to the lowest setting before you begin listening. After you begin listening, adjust the volume to a comfortable level.
- Once you set the volume, do not increase it. Over time, your ears adapt to the volume level, so a volume level that does not cause discomfort might still damage your hearing.

Traffic Safety

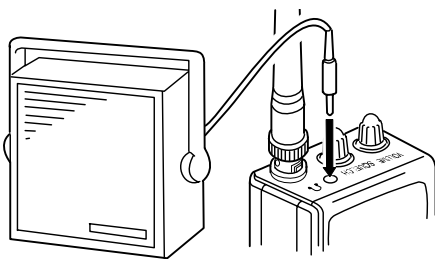
Do not use an earphone or headphones with your scanner when operating a motor vehicle or riding a bicycle in or near traffic. Doing so can create a traffic hazard and could be illegal in some areas.

If you use an earphone or headphones with your scanner while riding a bicycle, be very careful. Do not listen to a continuous broadcast. Even though some earphones/ headphones let you hear some outside sounds when listening at normal volume levels, they still can present a traffic hazard.

CONNECTING AN EXTENSION SPEAKER

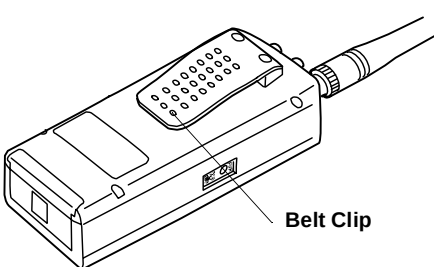
In a noisy area, an extension speaker (Cat. No. 21-549) or an amplified speaker (Cat. No. 21-541) might provide more comfortable listening.

Plug the speaker cable's $^1/_8$-inch plug into your scanner's jack.



USING THE BELT CLIP

You can use the belt clip for hands-free carrying when you are on the go. Simply slide the belt clip over your belt or waistband.



YOUR SCANNER

Once you understand a few simple terms we use in this manual and familiarize yourself with your scanner's features, you can put the scanner to work for you. You simply determine the communications you want to receive, then set the scanner to scan those frequencies.

A **frequency** is the tuning location of a station (expressed in kHz or MHz). To find active frequencies, you can use the **search** function to search **bands**, which are preset ranges of frequencies.

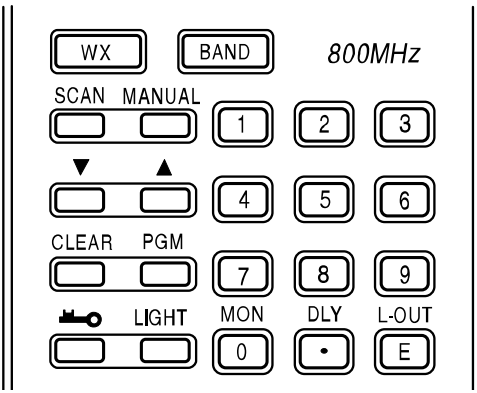
When you find a frequency, you can store it into a permanent memory location called a **channel**. You can then **scan** the channels to see if there is activity on the frequencies stored there. Each time the scanner finds an active frequency, it stays on that channel until the transmission ends.

Another option is to store the frequency into a temporary memory location called a **monitor memory** until you decide to move it to a channel.

Just keep in mind — you *search* frequencies and *scan* channels.

A LOOK AT THE KEYPAD

Your scanner's keys might seem confusing at first, but this information should help you understand each key's function.



WX — scans through the preprogrammed weather channels.

BAND — selects a preprogrammed search band.

SCAN — scans through the programmed channels.

MANUAL — stops scanning to let you directly enter a channel number.

▼/▲ — searches down or up from the currently displayed frequency, or selects the direction when you scan channels.

CLEAR — clears an incorrect entry.

PGM — lets you program frequencies into channels.

🔒 — locks/unlocks the keypad to prevent accidental entries.

LIGHT — turns on/off the display's backlight.

Number Keys — use these keys to enter the numbers for a channel or frequency.

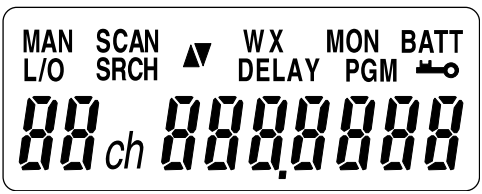
MON/0 — enters a zero or accesses the monitor memory.

DLY/● (delay/decimal point) — programs a 2-second delay for the selected channel, or enters a decimal point (necessary when programming frequencies).

L-OUT/E (lockout/enter) — locks out channels so they will not be scanned, or enters frequencies into channels.

A LOOK AT THE DISPLAY

The display has indicators that show the scanner's current operation.



MAN — appears when you manually select a channel.

SCAN — appears when you scan channels.

WX — appears when you scan or manually search the pre-programmed weather channels.

MON — appears when you listen to the monitor memory.

BATT — appears when battery power is low.

L/O — appears when you manually select a channel you locked out.

SRCH — appears during a band or direct frequency search.

▲ or ▼ — indicates the search or scan direction.

DELAY — appears when you program a 2-second delay for a channel.

PGM — appears while you program frequencies into the scanner's channels.

 — appears when you lock the keypad.

ch — appears after the digits (1–50) that show which channel the scanner is tuned to.

–d — appears during a direct frequency search.

000.0000 — the digits on the right of the display show which frequency the scanner is tuned to.

Error — appears when you make an entry error.

dUPL (duplicate) — appears when you try to store a frequency that is already stored in another channel.

UNDERSTANDING BANDS/MONITOR MEMORY

Search Bands

Your scanner can tune over 32,000 different frequencies. Many of these frequencies are grouped within permanent memory locations called search bands.

Band	Displayed Search Range (MHz)	Description
0	**29–50**	10-Meter Amateur Radio, VHF Lo
1	**50–54**	6-Meter Amateur Radio
2	**137–144**	Aircraft/Air Shows, Government
3	**144–148**	2-Meter Amateur Radio
4	**148–174**	VHF Hi
5	**380–420**	Government
6	**420–450**	70-Centimeter Amateur Radio
7	**450–470**	UHF Lo
8	**470–512**	UHF “T” Band
9	**806–960**	UHF Hi

Note: The actual search range of Band 9 is 806–824 MHz, 849–869 MHz, and 894–960 MHz. The scanner does not tune any frequencies between 824–849 MHz and 869–894 MHz, to help prevent reception of transmissions you should not listen to. For more information, see “Scanning Legally” on Page 6.

You can search these bands to quickly find active frequencies you might want to store into the scanner's channels. For example, if you wanted to search for transmissions between amateur radio operators, you could search only the search bands where you are most likely to hear the transmissions (Bands 0, 1, 3, and 6). See "Band Search" on Page 29.

Note: The frequencies in the scanner's search bands are preset. You cannot change them.

Monitor Memory

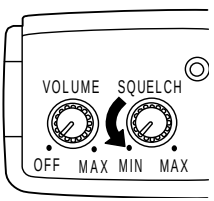
The scanner also has a monitor memory that you can use to temporarily store a frequency while you decide whether to save it into a channel. This is handy for quickly storing an active frequency when you are searching through an entire band using direct search. See "Direct Search" on Page 31.

OPERATION

TURNING ON THE SCANNER/ SETTING VOLUME AND SQUELCH

Note: Make sure the scanner's antenna is connected before you turn it on.

1. Turn **SQUELCH** fully counterclockwise.



2. Turn **VOLUME** clockwise until it clicks and you hear a hissing sound.

3. Turn **SQUELCH** clockwise until the hissing sound stops.

Notes:

- If the scanner picks up unwanted, partial, or very weak transmissions, turn **SQUELCH** clockwise to decrease the scanner's sensitivity to these signals. If you want to listen to a weak or distant station, turn **SQUELCH** counterclockwise.
- If **SQUELCH** is adjusted so you always hear a hissing sound, the scanner does not scan properly.

- If you have not stored frequencies into any channels (see “Storing Active Frequencies” on Page 27), the scanner does not scan.

STORING ACTIVE FREQUENCIES

You can manually store frequencies you already know into the scanner’s channels. You can also store frequencies you found using band search directly into channels. You can also store a frequency into a monitor memory then store it into a channel.

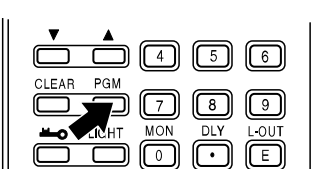
Good references for active frequencies are the RadioShack *Police Call Radio Guide Including Fire and Emergency Services*, *Aeronautical Frequency Directory*, and *Maritime Frequency Directory*. We update these directories every year, so be sure to get a current copy.

If you do not have a reference to frequencies in your area, follow the steps in “Band Search” on Page 29 or “Direct Search” on Page 31 to search for transmissions. See also “Guide to the Action Bands” on Page 41.

Manually Storing Frequencies

If you know a frequency you want to store, you can store it manually.

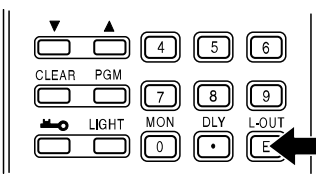
1. Press **PGM**. **PGM** appears.



2. Use the number keys to enter the channel number where you want to store the frequency, then press **PGM** again. Or, repeatedly press **PGM** until the desired channel number appears.

3. Use the number keys and **DLY/●** to enter the frequency (including the decimal point) you want to store into that channel.

4. Press **E** to store the frequency.



Notes:

- If you entered an invalid frequency in Step 3, **Error** appears, the channel number flashes, and the scanner beeps three times after you press **E**. Simply repeat Steps 3 and 4.
- Your scanner automatically rounds the entered frequency down to the nearest valid frequency. For example, if you enter a frequency of 151.4730, your scanner accepts it as 151.4700.
- If you entered a frequency that is already stored in another channel, **dUPL** (duplicate) and the lowest-numbered channel containing the duplicate frequency flash for about 3 seconds. To store the frequency anyway, press **E** again.

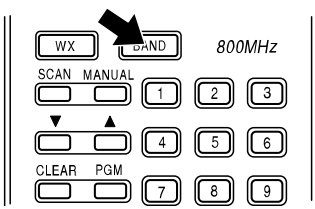
5. Repeat Steps 2–4 to store more frequencies into channels.

Band Search

If you do not know of a frequency to store, you can search your scanner's preprogrammed search bands (see "Search Bands" on Page 24) for active frequencies, then store any that you find into your scanner's channels.

Follow these steps to search for and store active frequencies using band search.

1. Press **BAND**. The last selected band number (**b** followed by the band number) and the frequency search range appear for about 2 seconds.



2. To select a different band, within 2 seconds, enter the band's number (0–9) or repeatedly press **BAND** until the desired band number appears.

   After about 2 seconds, **SRCH ▲** appears, the next available channel flashes, and the scanner begins searching rapidly upward in that band (from lowest to highest frequency) for an active frequency.

Notes:

- To reverse the search direction at any time, hold down ▼ for about 1 second.
- To search the band upward or downward in small increments (in steps of 5 or 12.5 kHz, depending on the band), repeatedly press and release ▲ or ▼.
- To select a different band after the scanner begins searching the current band, simply repeat Step 2.

The scanner stops when it finds an active frequency.

3. To store the displayed frequency in the channel currently flashing on the display, press **E**. The scanner stores the frequency, then the next available channel flashes.

   Notes:

   - You cannot store a frequency in the monitor memory during band search.
   - After you store a frequency into the last available channel, **--ch** appears instead of a channel number. If you try to store a channel while **--ch** appears, **Ch FULL** appears briefly. In order to store more frequencies, you must clear some channels. See “Clearing a Channel” on Page 34.

4. To search for another active frequency in the selected band, hold down ▲ or ▼ for about 1 second.

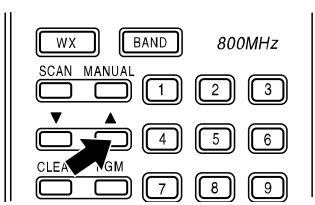
Direct Search

You can search up or down from the currently displayed frequency and store the frequency into the monitor memory.

1. Press **MANUAL** or **PGM**, then use the number keys and **DLY/●** to enter the frequency where you want to start the search.

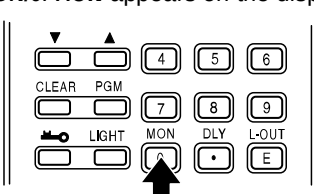
   Note: To start from a frequency already stored in one of your scanner's channels, press **MANUAL** or **PGM**, enter the desired channel number, then press **MANUAL** or **PGM** again.

2. Hold down ▲ or ▼ for about 1 second to search up or down from the selected frequency.



   When the scanner finds an active frequency, it stops searching.

3. To store the frequency in the monitor memory, simply press **MON/0**. **MON** appears on the display.



4. To continue the search, hold down ▲ or ▼ for about 1 second.

MOVING A FREQUENCY FROM THE MONITOR MEMORY TO A CHANNEL

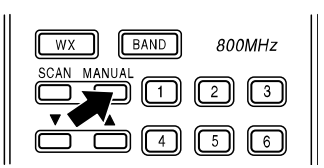
1. Press **MANUAL**, enter the channel number where you want to store the frequency, then press **PGM**. **PGM**, the frequency number or **000.0000**, and the selected channel number appear.
2. Press **MON**. **MON** and the frequency appear and the channel number flashes.
3. Press **E**. **MON** disappears, the channel number stops flashing, and the scanner stores the frequency in the selected channel.

MONITORING A STORED CHANNEL

You can continuously monitor a specific channel without scanning. This is useful if you hear an emergency broadcast on a channel and do not want to miss any details — even though there might be periods of silence — or if you simply want to monitor that channel.

Follow these steps to manually select a channel.

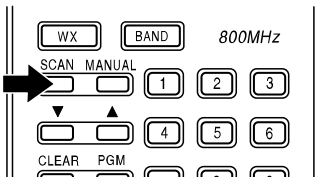
1. Press **MANUAL**.



2. Enter the channel number.
3. Press **MANUAL** again.

SCANNING THE CHANNELS

To begin scanning channels or to start scanning again after monitoring a specific channel, press **SCAN**.



SCAN and ▲ appear, and the scanner begins to rapidly scan upward until it finds an active frequency.

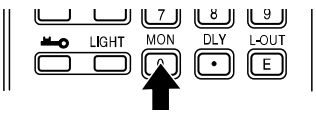
If the scanner finds an active frequency, it stops and displays that channel and frequency number, then it automatically begins scanning again when the transmission ends on that frequency.

Notes:

- You must store frequencies into channels before the scanner can scan them (see “Storing Active Frequencies” on Page 27).
- To change the scanning direction, press ▼ or ▲.
- The scanner does not scan empty channels.

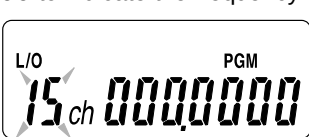
LISTENING TO THE MONITOR MEMORY

To listen to the frequency stored in the monitor memory, press **MANUAL** then **MON**. **MAN**, **MON**, and the frequency stored in the monitor memory appear.



CLEARING A CHANNEL

1. Press **MANUAL**.
2. Use the number keys to enter the channel number containing the frequency you want to delete, then press **PGM**. Or, repeatedly press **PGM** until the desired channel number appears. **PGM** appears.
3. Press **CLEAR**. The frequency number flashes.
4. Press **L-OUT**. **L/O** (lockout — see "Locking Out a Channel" on Page 36) appears, the channel number flashes, and the frequency number changes to **000.0000** to indicate the frequency is cleared.



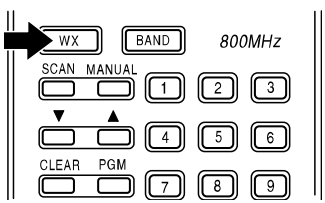
5. To delete more frequencies, repeat Steps 2–4.

LISTENING TO A WEATHER BAND

The FCC (Federal Communications Commission) has allocated channels for use by the National Oceanic and Atmospheric Administration (NOAA). Regulatory agencies in other countries have also allocated channels for use by their weather reporting authorities.

Your local weather reporting authority broadcast your local forecast and regional weather information on one or more of these channels.

To hear your local forecast and regional weather information, simply press **WX**. Your scanner scans through the weather band, and ▲ and **WX** appear. Your scanner should stop within a few seconds on your local weather broadcast.



If the broadcast is weak, press ▲ or ▼ to resume scanning.

To reverse the scanning direction, press ▲ or ▼.

To manually select a specific preprogrammed weather channel, repeatedly press **WX** until **MAN** appears, then:

- Repeatedly press ▲ or ▼ to move forward or backward through the channels.
- Press the 1-digit number (0–9) of the channel you want to listen to.

SPECIAL FEATURES

DELAY

Many agencies use a two-way radio system that might have a pause of several seconds between a query and a reply. To avoid missing a reply, you can program a 2-second delay into any of your scanner's channels. Then, when the scanner stops on the channel, **DELAY** appears and the scanner continues to monitor the channel for 2 seconds after the transmission stops before it resumes scanning.

You can program a 2-second delay in any of these ways:

- If the scanner is scanning and stops on an active channel, quickly press **DLY** before it starts to scan again.
- If the desired channel is not selected, manually select the channel then press **DLY**.
- If the scanner is searching, press **DLY** during the search.

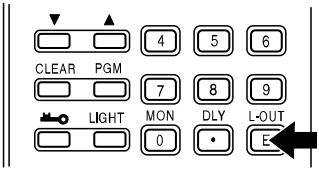
DELAY appears and the scanner automatically adds a 2-second delay to every transmission it stops on.

To turn off the delay, press **DLY** when **DELAY** is displayed.

LOCKING OUT A CHANNEL

You can scan existing channels faster by locking out a channel that has a continuous transmission, such as a weather channel.

To lock out a channel, select the channel then press **L-OUT**. **L/O** appears.



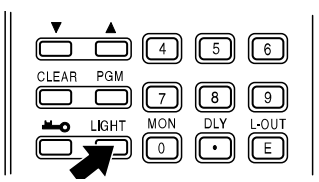
To remove the lockout from a channel, manually select the channel then press **L-OUT** until **L/0** disappears.

Notes:

- You can still manually select locked-out channels.
- Your scanner automatically locks out empty channels.

USING THE DISPLAY BACKLIGHT

You can turn on the display's backlight for easy viewing in dimly-lit areas. Press **LIGHT** to turn on the display light for 5 seconds. To turn off the light before it automatically turns off, press **LIGHT** again.



TURNING THE KEY TONE ON AND OFF

Each time you press any of the scanner's keys (except and **LIGHT**), the scanner sounds a tone.

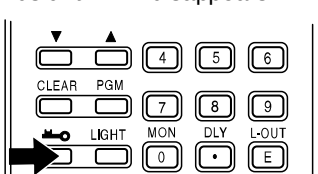
Follow these steps to turn the scanner's key tone off or back on.

1. If the scanner is on, turn **VOLUME** counterclockwise until it clicks to turn it off.
2. While you hold down the **2** and **E** keys, turn on the scanner.
3. After 1 second, release **2** and **E**.

USING THE KEYLOCK

Once you program your scanner, you can protect it from accidental program changes by turning on the keylock feature. When the keypad is locked, the only controls that operate are **LIGHT**, **VOLUME**, and **SQUELCH** (and the scanner continues to scan channels).

To turn on the keylock, hold down for about 3 seconds until appears. The scanner beeps three times (if the key tone is turned on). To turn it off, hold down for about 3 seconds until disappears.



A GENERAL GUIDE TO SCANNING

Reception of the frequencies covered by your scanner is mainly “line-of-sight.” That means you usually cannot hear stations that are beyond the horizon.

GUIDE TO FREQUENCIES

US Weather Frequencies

162.400	162.425	162.450	162.475
162.500	162.525	162.550	

Other Weather Frequencies

161.650	161.775	162.440	163.275

Ham Radio Frequencies

Ham radio operators often transmit emergency information when other means of communication break down. The following chart shows the frequencies the scanner receives that Ham radio operators normally use:

Wavelength (meters)	Frequencies (MHz)
10-Meter	29.000–29.700
6-Meter	50.000–54.000
2-Meter	144.000–148.000
70-cm	420.000–450.000
33-cm	902.000–928.000

Birdie Frequencies

Every scanner has birdie frequencies. Birdies are signals created inside the scanner's receiver. These operating frequencies might interfere with broadcasts on the same frequencies. If you program one of these frequencies, you hear only noise on that frequency. If the interference is not severe, you might be able to turn **SQUELCH** clockwise to cut out the birdie.

The birdie frequencies on this unit to watch for are:

30.735	37.800	38.400
40.000	40.980	41.900
51.200	140.800	149.400
153.000-153.300	153.500-153.800	157.300-157.800
158.085	159.300-159.700	161.400-161.900
163.920	166.400	384.000
396.800	409.600	422.400
435.200	448.000	460.800
473.600	486.400	499.200
512.000		

To find the birdies in your scanner, begin by disconnecting the antenna and moving it away from the scanner. Make sure that no other nearby radio or TV sets are turned on near the scanner. Use the search function and scan every frequency range from its lowest frequency to the highest. Occasionally, the searching will stop as if it had found a signal, often without any sound. That is a birdie. Make a list of all the birdies in your scanner for future reference.

GUIDE TO THE ACTION BANDS

United States Broadcast Bands

In the United States, there are several broadcast bands. The standard AM and FM bands are probably the most well known. There are also four television audio broadcast bands — the lower three transmit on the VHF band and the fourth transmits on the UHF band.

Typical Band Usage

VHF Band	
Low Range	29.00–50.00 MHz
6-Meter Amateur	50.00–54.00 MHz
U.S. Government	137.00–144.00 MHz
2-Meter Amateur	144.00–148.00 MHz
High Range	148.00–174.00 MHz

UHF Band	
Military Aircraft	380.00–384.00 MHz
U.S. Government	406.00–420.00 MHz
70-cm Amateur	420.00–450.00 MHz
Low Range	450.00–470.00 MHz
FM-TV Audio Broadcast, Wide Band	470.00–512.00 MHz
800 Band Law Enforcement	806.00–824.00 MHz
Conventional Systems	851.00–856.00 MHz
Conventional/Trunked Systems	856.00–866.00 MHz
Public Safety	866.00–869.00 MHz
Trunked Private/General	894.00–960.00 MHz

Primary Usage

As a general rule, most of the radio activity is concentrated on the following frequencies:

VHF Band

Activities	Frequencies
Government, Police, and Fire	153.785–155.980 MHz
Emergency Services	158.730–159.460 MHz
Railroad	160.000–161.900 MHz

UHF Band

Activities	Frequencies
Land-Mobile “Paired” Frequencies	450.000–470.000 MHz
Base Stations	451.025–454.950 MHz
Mobile Units	456.025–459.950 MHz
Repeater Units	460.025–464.975 MHz
Control Stations	465.025–469.975 MHz

Note: Remote control stations and mobile units operate at 5 MHz higher than their associated base stations and relay repeater units.

SPECIFIED INTERVALS

Frequencies in different bands are accessible only at specific intervals. For example:

Frequency Range(s)	Specified Interval
29–54 and 137–174 MHz	5.0 kHz steps
380–512 and 806–960 MHz	12.5 kHz steps

BAND ALLOCATION

To help decide which frequency ranges to scan, use the following listing of the typical services that use the frequencies your scanner receives. These frequencies are subject to change, and might vary from area to area. For a more complete listing, refer to the *Police Call Radio Guide including Fire and Emergency Services*, available at your local RadioShack store.

Abbreviations	Services
AIR	Aircraft
BIFC	Boise (ID) Interagency Fire Cache
BUS	Business
CAP	Civil Air Patrol
CB	Citizens Band
CCA	Common Carrier
CSB	Conventional Systems
CTSB	Conventional/Trunked Systems
FIRE	Fire Department
HAM	Amateur (Ham) Radio
GOVT	Federal Government
GMR	General Mobile Radio
GTR	General Trunked
IND	Industrial Services (Manufacturing, Construction, Farming, Forest Products)
MAR	Military Amateur Radio
MARI	Maritime Limited Coast (Coast Guard, Marine Telephone, Shipboard Radio, Private Stations)
MARS	Military Affiliate Radio System
MED	Emergency/Medical Services
MIL	U.S. Military
MOV	Motion Picture/Video Industry
NEW	New Mobile Narrow
NEWS	Relay Press (Newspaper Reporters)

OIL . . . . . Oil/Petroleum Industry
POL . . . . . Police Department
PUB . . . . . Public Services
(Public Safety, Local Government, Forestry Conservation)
PSB . . . . . Public Safety
PTR. . . . . Private Trunked
ROAD . . . . . Road & Highway Maintenance
RTV. . . . . Radio/TV Remote Broadcast Pickup
TAXI . . . . . Taxi Services
TELB. . . . . Mobile Telephone
(Aircraft, Radio Common Carrier, Landline Companies)
TELC . . . . . Cordless Phones
TELM . . . . . Telephone Maintenance
TOW . . . . . Tow Trucks
TRAN . . . . . Transportation Services
(Trucks, Tow Trucks, Buses, Railroad, Other)
TSB. . . . . Trunked Systems
TVn . . . . . FM-TV Audio Broadcast
USXX . . . . . Government Classified
UTIL . . . . . Power & Water Utilities
WTHR . . . . . Weather

VERY HIGH FREQUENCY (VHF)

VHF Low Band—(in 5 kHz steps)

29.900–30.550 . . . . . GOVT, MIL
30.580–31.980 . . . . . IND, PUB
32.000–32.990 . . . . . GOVT, MIL
33.020–33.980 . . . . . BUS, IND, PUB
34.010–34.990 . . . . . GOVT, MIL
35.020–35.980 . . . . . BUS, PUB, IND, TELM
36.000–36.230 . . . . . GOVT, MIL
36.250. . . . . Oil Spill Cleanup
36.270–36.990 . . . . . GOVT, MIL
37.020–37.980 . . . . . PUB, IND
38.000–39.000 . . . . . GOVT, MIL
39.020–39.980 . . . . . PUB
40.000–42.000 . . . . . GOVT, MIL, MARI
42.020–42.940 . . . . . POL
42.960–43.180 . . . . . IND
43.220–43.680 . . . . . TELM, IND, PUB
43.700–44.600 . . . . . TRAN
44.620–46.580 . . . . . POL, PUB
46.600–46.990 . . . . . GOVT, TELC
47.020–47.400 . . . . . PUB
47.420. . . . . American Red Cross
47.440–49.580 . . . . . IND, PUB
49.610–49.990 . . . . . MIL, TELC

6-Meter Amateur Band

50.00–54.00 . . . . . HAM

U.S. Government Band

137.000–144.000 . . . . . GOVT, MIL

2-Meter Amateur Band

144.000–148.000 . . . . . HAM

VHF High Band

148.050–150.345 . . . . . CAP, MAR, MIL
150.775–150.790 . . . . . MED
150.815–150.980 . . . . . TOW, Oil Spill Cleanup
150.995–151.475 . . . . . ROAD, POL
151.490–151.955 . . . . . IND, BUS
151.985 . . . . . TELM
152.0075 . . . . . MED
152.030–152.240 . . . . . TELB
152.270–152.480 . . . . . IND, TAXI, BUS
152.510–152.840 . . . . . TELB
152.870–153.020 . . . . . IND, MOV
153.035–153.725 . . . . . IND, OIL, UTIL
153.740–154.445 . . . . . PUB, FIRE
154.490–154.570 . . . . . IND, BUS
154.585 . . . . . Oil Spill Cleanup
154.600–154.625 . . . . . BUS
154.655–156.240 . . . . . MED, ROAD, POL, PUB
156.255–157.425 . . . . . OIL, MARI
157.450 . . . . . MED
157.470–157.515 . . . . . TOW
157.530–157.725 . . . . . IND, TAXI
157.740 . . . . . BUS
157.770–158.100 . . . . . TELB
158.130–158.460 . . . . . BUS, IND, OIL, TELM, UTIL
158.490–158.700 . . . . . TELB
158.730–159.465 . . . . . POL, PUB, ROAD
159.480 . . . . . OIL
159.495–161.565 . . . . . TRAN
161.580–162.000 . . . . . OIL, MARI, RTV
162.0125–162.35 . . . . . GOVT, MIL, USXX
162.400–162.550 . . . . . WTHR
162.5625–162.6375 . . . . . GOVT, MIL, USXX
162.6625 . . . . . MED
162.6875–163.225 . . . . . GOVT, MIL, USXX
163.250 . . . . . MED
163.275–166.225 . . . . . GOVT, MIL, USXX
166.250 . . . . . GOVT, RTV, FIRE
166.275–169.400 . . . . . GOVT, BIFC
169.445–169.505 . . . . . Wireless Mikes, GOVT
169.55–169.9875 . . . . . GOVT, MIL, USXX
170.000–170.150 . . . . . BIFC, GOVT, RTV, FIRE
170.175–170.225 . . . . . GOVT
170.245–170.305 . . . . . Wireless Mikes
170.350–170.400 . . . . . GOVT, MIL

170.425–170.450 . . . . . BIFC
170.475. . . . . PUB
170.4875–173.175 . . . . . GOVT, PUB, Wireless Mikes
173.225–173.5375 . . . . . MOV, NEWS, UTIL, MIL
173.5625–173.5875 . . . . . MIL Medical/Crash Crews
173.60–173.9875 . . . . . GOVT

ULTRA HIGH FREQUENCY (UHF)

U. S. Government Band
406.125–419.975 . . . . . GOVT, USXX

70-cm Amateur Band
420.000–450.000 . . . . . .HAM

Low Band
450.050–450.925 . . . . . RTV
451.025–452.025 . . . . . IND, OIL, TELM, UTIL
452.0375–453.00 . . . . . IND, TAXI, TRAN TOW, NEWS
453.0125–454.000 . . . . . PUB, OIL
454.025–454.975 . . . . . TELB
455.050–455.925 . . . . . RTV
457.525–457.600 . . . . . BUS
458.025–458.175 . . . . . .MED
460.0125–460.6375 . . . . . FIRE, POL, PUB
460.650–462.175 . . . . . BUS
462.1875–462.450 . . . . . BUS, IND
462.4625–462.525 . . . . . IND, OIL, TELM, UTIL
462.550–462.925 . . . . . GMR, BUS
462.9375–463.1875 . . . . . .MED
463.200–467.925 . . . . . BUS

FM-TV Audio Broadcast, UHF Wide Band (Channels 14 through 69 in 6 MHz steps)
475.750. . . . . Channel 14
481.750. . . . . Channel 15
487.750. . . . . Channel 16
. .
511.750. . . . . Channel 20

Note: Some cities use the 470–512 MHz band for land/mobile service.

Conventional Systems Band — Locally Assigned
851.0125–855.9875 . . . . . CSB

Conventional/Trunked Systems Band — Locally Assigned
856.0125–860.9875 . . . . . CTSB

Trunked Systems Band — Locally Assigned
861.0125–865.9875 . . . . . TSB

Public Safety Band — Locally Assigned
866.0125–868.9875 . . . . . PSB

33-Centimeter Amateur Band
902.0000–928.0000 . . . . . HAM

Private Trunked
935.0125–939.9875 . . . . . PTR

General Trunked
940.0125–940.9875 . . . . . GTR

FREQUENCY CONVERSION

The tuning location of a station can be expressed in frequency (kHz or MHz) or in wavelength (meters). The following information can help you make the necessary conversions.

1 MHz (million) = 1,000 kHz (thousand)

To convert MHz to kHz, multiply the number of megahertz by 1,000:

30.62 (MHz) x 1000 = 30,620 kHz

To convert from kHz to MHz, divide the number of kilohertz by 1,000:

127,800 (kHz) ÷ 1000 = 127.8 MHz

To convert MHz to meters, divide 300 by the number of megahertz:

300 ÷ 50 MHz = 6 meters

TROUBLESHOOTING

If your scanner is not working as it should, these suggestions might help you eliminate the problem. If the scanner still does not operate properly, take it to your local RadioShack store for assistance.

Problem	Possible Causes	Remedies
The scanner does not work at all.	The AC or DC adapter is not properly connected.	Be sure the adapter is plugged into a working AC outlet or cigarette-lighter socket, and is fully inserted into the scanner's **PWR/DC 9V** jack.
	The internal batteries/battery pack needs to be recharged, or the non-rechargeable batteries are dead.	Charge the rechargeable batteries or battery pack, or replace non-rechargeable batteries with fresh batteries.
Poor or no reception.	Improperly connected antenna.	Be sure the antenna is properly connected.
	Programmed frequencies are the same as birdie frequencies.	Avoid programming frequencies listed under "Birdie Frequencies" on Page 40.

Problem	Possible Causes	Remedies
Scanner is on but does not scan.	**SQUELCH** is not correctly adjusted.	Adjust **SQUELCH** clockwise (see "Turning On the Scanner/Setting Volume and Squelch" on Page 26).
In the scan mode, the scanner locks on frequencies that have an unclear transmission.	Programmed frequencies are the same as birdie frequencies.	Avoid programming frequencies listed under "Birdie Frequencies" on Page 40 or only listen to them manually.

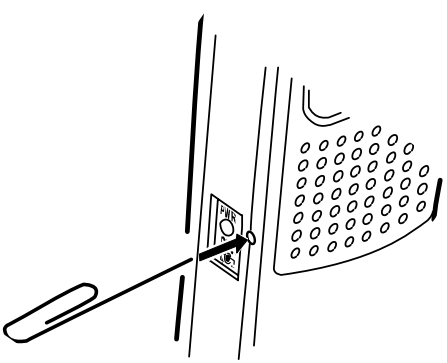
RESETTING/INITIALIZING THE SCANNER

If the scanner's display locks up or does not work properly after you connect a power source, you might need to reset or initialize it.

Important: If you have problems, first try to reset the scanner. If that does not work, you can initialize the scanner; however, initializing clears all frequencies you stored in the scanner's memory and initializes the scanner to its default settings.

Resetting the Scanner

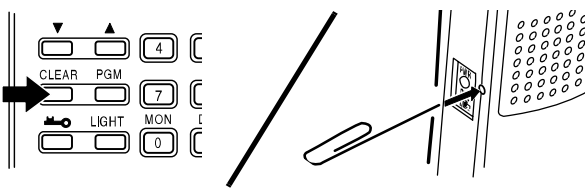
1. Turn off the scanner, then turn it on again.
2. Insert a pointed object, such as a straightened paper clip, into the reset hole on the side of the scanner. Then gently press and release the reset button inside the opening. The display goes blank, then information reappears.



Initializing the Scanner

Important: This procedure clears all frequencies you stored in the scanner's memory and initializes the scanner to its default settings. Initialize the scanner only when you are sure the scanner is not working properly.

1. Turn off the scanner, then turn it on again.
2. While holding down **CLEAR**, insert a pointed object, such as a straightened paper clip, into the reset hole on the side of the scanner. Then gently press and release the reset button inside the opening. The display goes blank, then information reappears.



Note: You must release the reset button before you release **CLEAR**. Otherwise, the memory might not clear.

3. When the display reappears, release **CLEAR**.

CARE AND MAINTENANCE

Your RadioShack PRO-72 50-Channel Portable Scanner is an example of superior design and craftsmanship. The following suggestions will help you care for your scanner so you can enjoy it for years.

Keep the scanner dry. If it gets wet, wipe it dry immediately. Liquids might contain minerals that can corrode the electronic circuits.

Use and store the scanner only in normal temperature environments. Temperature extremes can shorten the life of electronic devices, damage batteries, and distort or melt plastic parts.

Keep the scanner away from dust and dirt, which can cause premature wear of parts.

Handle the scanner gently and carefully. Dropping it can damage circuit boards and cases and can cause the scanner to work improperly.

Use only fresh batteries of the required size and type. Batteries can leak chemicals that damage your scanner's electronic parts.

Wipe the scanner with a damp cloth occasionally to keep it looking new. Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the scanner.

Modifying or tampering with the scanner's internal components can cause a malfunction and might invalidate your scanner's warranty and void your FCC authorization to operate it. If your scanner is not performing as it should, take it to your local RadioShack store for assistance.

SPECIFICATIONS

Frequency Coverage:

Ham	29–30 MHz (5.0 kHz steps)
VHF Lo	30–50 MHz (5.0 kHz steps)
Ham	50–54 MHz (5.0 kHz steps)
Government	137–144 MHz (5.0 kHz steps)
Ham	144–148 MHz (5.0 kHz steps)
VHF Hi	148–174 MHz (5.0 kHz steps)
Ham/Government	380–450 MHz (12.5 kHz steps)
UHF Lo	450–470 MHz (12.5 kHz steps)
UHF Hi (T)	470–512 MHz (12.5 kHz steps)
UHF Hi	806–824 MHz (in 12.5 kHz steps)
	849–860 MHz (in 12.5 kHz steps)
	894–960 MHz (in 12.5 kHz steps)

Channels of Operation: ..... 50 Channels and 1 Monitor Memory

Sensitivity (20 dB S/N):

29–54 MHz	1.0 µV
137–174 MHz	1.0 µV
380–512 MHz	1.0 µV
806–960 MHz	2.0 µV

Selectivity:

±10 kHz	–6 dB
±18 kHz	–50 dB

Spurious Rejection:

29–54 MHz	50 dB at 40 MHz
137–174 MHz	50 dB at 154 MHz

Scanning Rate ..... Up to 25 channels/second

Search Rate ..... Up to 50 steps/second

Delay Time ..... 2 seconds

Intermediate Frequencies (IF):

1st	10.7 MHz
2nd	455 kHz

IF Rejection: 10.7 MHz ..... 70 dB at 154 MHz

Squelch Sensitivity:
Threshold ..... Less than 1.0 µV
Tight ..... (S+N)/N 25 dB

Antenna Impedance ..... 50 Ohms

Audio Output Power (10% THD) ..... 200 mW Nominal

Built-in Speaker ..... $1^3/_8$ Inch (36 mm)
8 ohm, Dynamic Type

Power Requirements ..... 9 V DC, 6 AA batteries
AC Adapter (Cat. No. 273-1665)
DC Adapter (Cat. No. 270-1560)
Rechargeable Battery Pack (Cat. No. 23-288)

Current Drain (Squelched) .....50 mA

Dimensions (HWD) ..... $6^3/_4 \times 2^5/_{16} \times 1^9/_{16}$ Inches
($171 \times 59 \times 40$ mm)

Weight ..... 8.5 oz
(240 g)

Supplied Accessory ..... Antenna

Specifications are typical; individual units might vary. Specifications are subject to change and improvement without notice.

US PATENT NUMBERS

3,794,925
3,801,914
3,961,261
3,962,644
4,027,251
4,092,594
4,123,715
4,245,348

Limited One-Year Warranty

This product is warranted by RadioShack against manufacturing defects in material and workmanship under normal use for one (1) year from the date of purchase from RadioShack company-owned stores and authorized RadioShack franchisees and dealers. In the event of a product defect during the warranty period, take the product and the RadioShack sales receipt as proof of purchase date to any RadioShack store. RadioShack will, at its option, unless otherwise provided by law: (a) correct the defect by product repair without charge for parts and labor; (b) replace the product with one of the same or similar design; or (c) refund the purchase price. All replaced parts and products, and products on which a refund is made, become the property of RadioShack. New or reconditioned parts and products may be used in the performance of warranty service. Repaired or replaced parts and products are warranted for the remainder of the original warranty period. You will be charged for repair or replacement of the product made after the expiration of the warranty period.

This warranty does not cover: (a) damage or failure caused by or attributable to acts of God, abuse, accident, misuse, improper or abnormal usage, failure to follow instructions, improper installation or maintenance, alteration, lightning or other incidence of excess voltage or current; (b) any repairs other than those provided by a RadioShack Authorized Service Facility; (c) consumables such as fuses or batteries; (d) cosmetic damage; (e) transportation, shipping or insurance costs; or (f) costs of product removal, installation, set-up service adjustment or reinstallation.

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